

# **Fantasea F400D Housing User's Manual**



## Table of Contents

<b>FANTASEA F400D HOUSING .....</b>	<b>1</b>
<b>TABLE OF CONTENTS .....</b>	<b>2</b>
<b>INTRODUCTION .....</b>	<b>3</b>
<b>INCLUDED WITH HOUSING.....</b>	<b>3</b>
<b>RECOMMEND ACCESSORIES (NOT INCLUDED) .....</b>	<b>4</b>
<b>CAMERA MODEL .....</b>	<b>4</b>
<b>A VARIETY OF USES .....</b>	<b>5</b>
<b>SPECIFICATIONS AND CONTROLS .....</b>	<b>5</b>
<b>HOUSING ORIENTATION .....</b>	<b>7</b>
<b>CONTROL DETAILS .....</b>	<b>9</b>
<b>TRAY AND HANDLE SYSTEM ASSEMBLY .....</b>	<b>14</b>
<b>PREPARATION OF HOUSING BEFORE THE DIVE.....</b>	<b>16</b>
<b>CARE &amp; MAINTENANCE.....</b>	<b>20</b>
<b>BASIC SHOOTING TECHNIQUES.....</b>	<b>22</b>
<b>CAMERA LENSES AND PORTS .....</b>	<b>24</b>
<b>FANTASEA F400D WARRANTY .....</b>	<b>25</b>

## Introduction

Welcome to the exciting world of underwater digital SLR photography. Your purchase of the Fantasea F400D housing for the Canon 400D digital camera will set you apart from other photographers. With this system, you will enjoy the best chance of capturing the widest variety of superior underwater images. You will find the housing to be easy and instinctive to use and handle and will have countless dives in which to experiment with the F400D's advanced imaging capabilities. Fantasea Line Photo is pleased to offer our help with any of your photographic needs.

The purpose of this manual is to provide you with the basic introduction to your Fantasea F 400D, which should get you comfortable with the housing and allow you to get started taking great underwater images right away. We strongly urge you to thoroughly read the Canon 400D instruction manual as well, to familiarize yourself with the most common controls and settings that you will use for your underwater photography. The Fantasea F400D housing will permit access to most of the important controls on the camera. To take full advantage of these features, it is best to have a good command of what each option can do for you, so you will know when you should use each specific control.

## Included With Housing

- The F400D housing consists of a front and back shell that latch together to form the housing body
- A screw in standard flat port is included. This port will accommodate the 18-55mm lens. Other optional ports are available for different lenses ( 5 inch super wide angle Dome Port, 60 mm macro/close up port and 100mm super macro port)
- Two Aluminum B and J housing handles come with your housing, (due to packaging restrictions they may need to be assembled by the customer). These handles include 1" (25mm) round ball mounts which integrate nicely with most B and J Arm systems, making for easy integration with most underwater lighting and flash systems. The handles are easily assembled by tightening one screw head per handle. They are also adjustable to fit divers using gloves
- Base plate for mounting other tray and arm systems
- Zoom Control Guide Band that is attached to the camera lens
- Optical viewfinder eyepiece built into the back cover of the housing to assist the photographer in viewing and focusing
- A five-pin TTL flash sync port to connect with the 400D's hot shoe
- Removable camera mounting tray that slides into position with the 400D attached, positioning the camera in the exact location for perfect control alignment

- Spare O-Rings for the housing and lens port
- Adjustment tools
- Wrist lanyard
- Warranty and other documents
- Instruction manual
- Silicone
- Cleaning cloth
- Lens port cover

## Recommend Accessories (not included)

### ***Accessories:***

- Carry bag (optional)
- Red filter (optional)
- Extension arm for strobe or video light (optional)
- Macro, Wide and Dome ports (optional)
- Housings for eTTL Speedlite 580EX (optional)
- 6 pin eTTL sync cord (optional)

### ***Additional Features:***

- Visible main O-ring for final pre-dive check
- Handles with Flash mounts
- Double O-ring design on all controls
- Bulkhead and Hotshoe plug for strobe (included)

## Camera Model

Fantasea F400D is dedicated exclusively to the Canon 400D camera. The size and shape of the camera, plus the location of controls for alignment with housing controls requires this precision design. Together, the 400D camera and F400D housing offer the best combination of advanced digital photography at an affordable price. No other camera may be used in the Fantasea F400D housing.

### Some Camera Features:

- 10.1 megapixel CMOS sensor with improved microlens array, fill factor and lower noise
- EOS Integrated Cleaning System
  - Anti-static coatings on sensor surfaces plus anti-dust materials in the camera body
  - Separate low pass filter with ultra-sonic vibration
  - Software based dust mapping / removal
- Nine point Auto Focus sensor (same as EOS 30D) with F2.8 support

- Continuous shooting burst up to 27 JPEG and 10 RAW images
- Single large, bright, 2.5" LCD monitor with 160° viewing angles (horizontal and vertical)
- Camera settings and adjustment on LCD monitor
- Proximity sensor below viewfinder eyepiece to disable the LCD during composition
- New viewfinder view includes 9 AF points as well as EOS 30D style status bar
- Picture Styles, larger range of image parameter adjustment (same as EOS 30D)
- Improved user interface
- Image magnification available in record review

## A Variety of Uses

The Fantasea F400D housing is more than just an underwater camera system. It protects the Canon 400D against damage from such environmental conditions as rain, snow, dust, sand, and dirt. It is perfect protection for active outdoor sports, where these elements would normally not allow an advanced camera like the 400D to be used without danger of damage. The lightweight, compact housing and handles make it easy to hold and use while sailing, fishing, kayaking, backpacking, or just for fun at the beach or around the pool. It will also provide a valuable tool for many commercial, industrial, and medical applications, because it is impervious to most liquids, and sprays.

## Specifications and Controls

### *Specifications:*

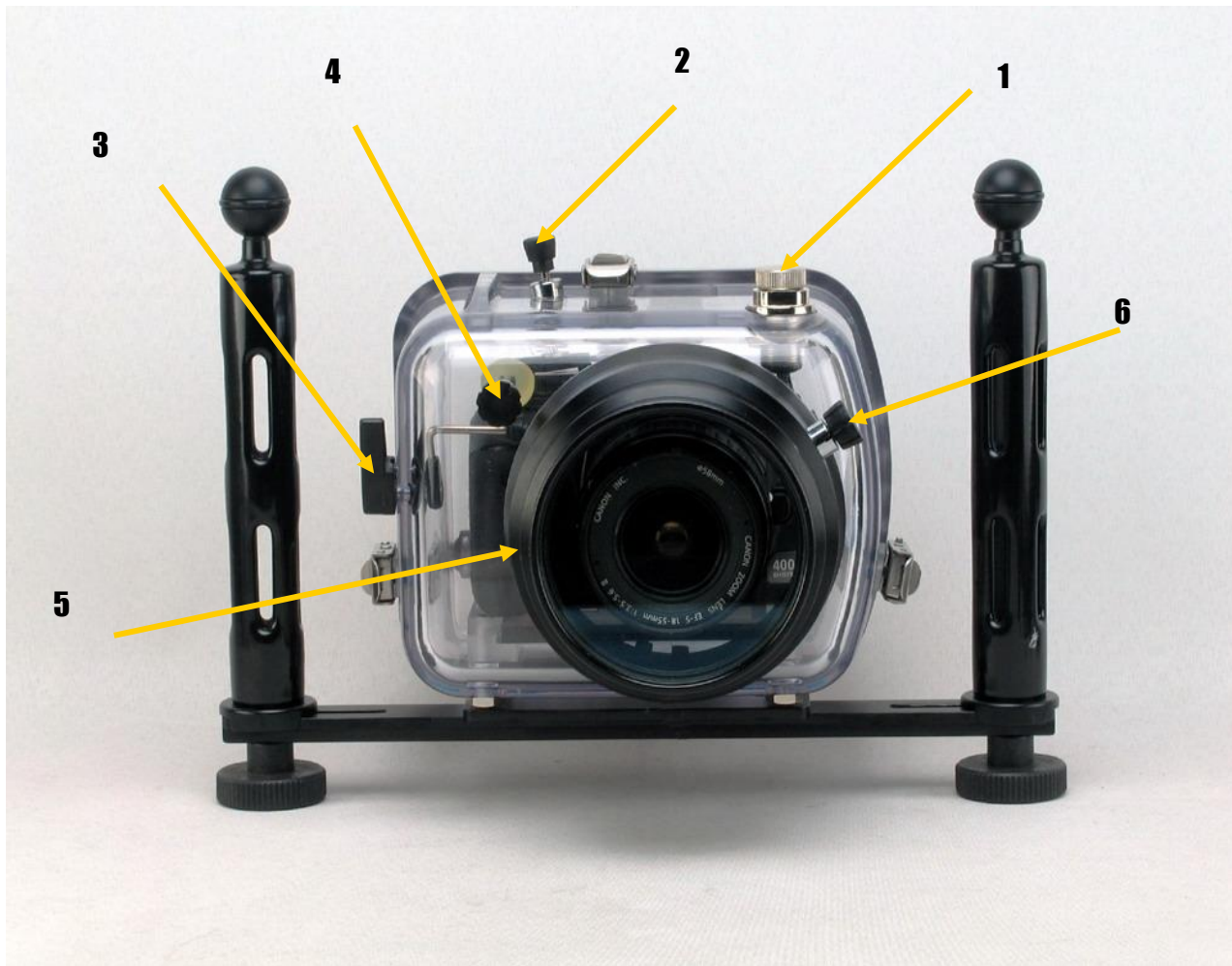
- The main seal between front and back halves is a radial O-ring
- The ports are sealed when mounted by 2 O-rings, one Radial and one Compression type.
- Controls use stainless steel shafts and springs
- Controls are sealed by double O-rings
- Control knobs and buttons are made of molded polycarbonate
- Closure Design: Buckles are stainless steel
- Body Material: Body and handles are made of molded polycarbonate
- Flash sync port is a six-pin type TTL connector
- Test Pressure: The Fantasea F400D has a maximum working depth rating of 200' (60m)
- Overall Size: 200 x 300 x 230 mm [LxWxH]
- Total Weight: Approximately 2.6 Kg for the housing only
- Buoyancy with camera: Approximately neutral in salt water

### *Controls:*

- Manual Zoom
- ON/OFF
- Shutter Release
- Mode Control

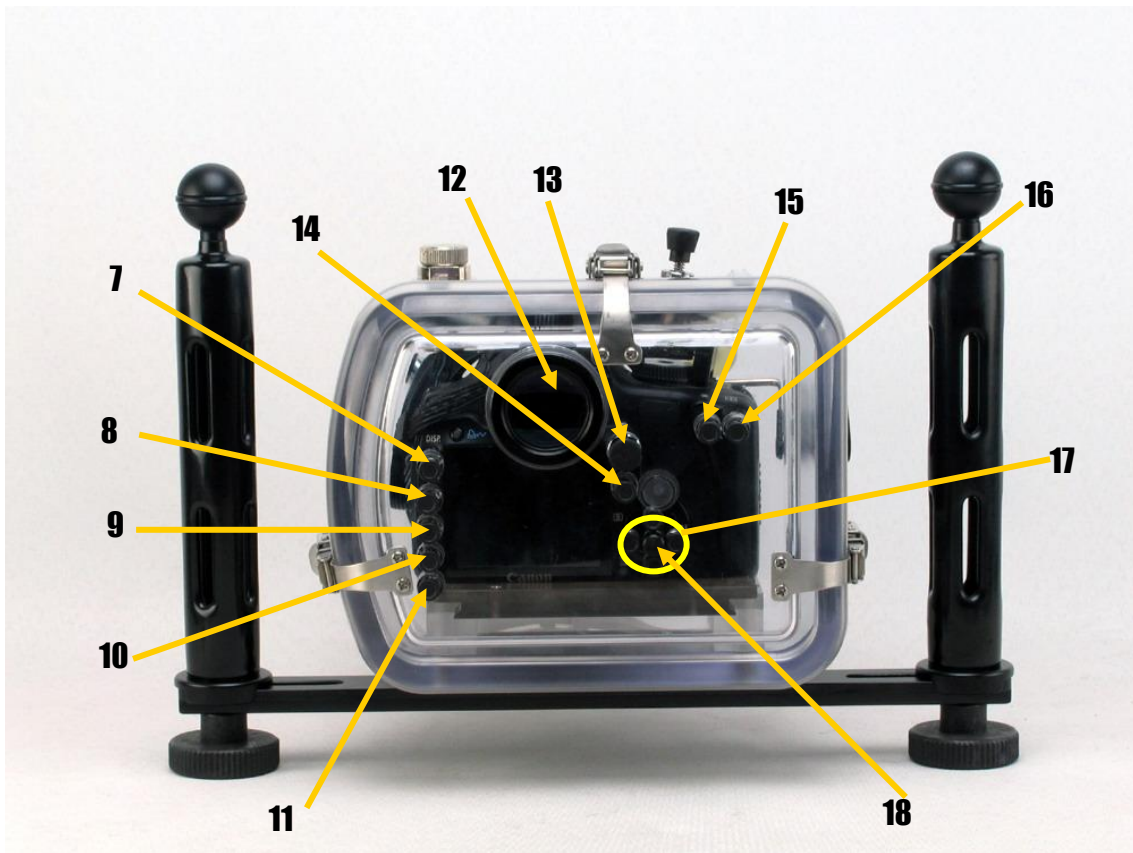
- LCD Control Panel Illuminator
- Aperture/Exposure Compensation Control
- Flash Sync Port
- AF Point Selection
- Playback
- Set Control
- Erase
- AE-L/AF-L
- Four Way Multi-Control
  - Meter Mode
  - White Balance
  - Iso Speed /Set Control
  - Auto Focus
- Command Dial for Speed and Aperture changes

## Housing Orientation



### Top and Front:

- |                                   |   |
|-----------------------------------|---|
| • 6 Pin Flash Sync Port Bulkhead  | 1 |
| • Mode Control/<br>ON/OFF Control | 2 |
| • Main Trigger [Shutter]          | 3 |
| • Command Main Dial               | 4 |
| • Interchangeable Port Mount      | 5 |
| • Zoom Lens Control               | 6 |



## Back Side:

- |  |    |
|--|----|
| • Display (On/Off) / Info                | 7  |
| • Menu                                   | 8  |
| • Jump                                   | 9  |
| • Playback Control                       | 10 |
| • Erase                                  | 11 |
| • Viewfinder Eyepiece                    | 12 |
| • Aperture/Exposure Compensation Control | 13 |
| • Drive Mode                             | 14 |
| • AE-Lock/FE-Lock Control/Enlarge        | 15 |
| • AF Point Selection                     | 16 |
| • 4 Button Multi Selector                | 17 |
| ○ Metering Mode                          |    |
| ○ ISO Speed Set                          |    |
| ○ Auto Focus                             |    |
| ○ White Balance                          |    |
| • Set Control                            | 18 |



## Control Details

The following is a partial list of the most common uses of housing and camera controls. For the full list of camera functions and settings accessed by each control, you should consult your Canon 400D camera instruction manual.

Please note that some of the Fantasea F400D housing controls are designed to operate more than one camera control.

### Flash Sync Port: ①

- Connect the Canon 6 pin sync cord to this bulkhead connector.
- Align the index marks to correctly position cord to seat in flash port.
- Push down on cord to seat the O-ring seal, and make connection with the contact pins.
- Tighten collar on sync cord to insure cord does not come loose or separates while underwater or during use.
  - A 6 pin to 5 pin adaptor cord is available for users that have the 5 pin Nikonos type flashes.

### ON/OFF / Mode Control: ②

Dual Function Control button:

- <On> the power lamp lights, and the camera turns on.
- <Off> the camera is off and does not operate. Set to this position when not in use.
- The second feature sets the Mode Control; push down and twist to set the mode;
  - Mode dial is divided into two functional zones: Basic and Creative.
    1. Basic: all you do is press the shutter button for fully automatic shooting with a choice of specific subject shooting modes.
    2. Creative: can set camera to your specific parameters. These modes will give you more control over the result. See Canon 400D instruction manual for full details.

### Main Trigger [Shutter]: ③

- Depress halfway to set the focus and fully depress to activate shutter.
  - Halfway depression activates auto-focusing [AF] and automatic exposure [AE] setting shutter speed and aperture.
  - Depressing completely releases the shutter and takes the picture.

### Shutter Speed and Aperture Control [Command Main Dial]: ④

When a creative zone is chosen, the Command Dial is used.

- This is a double function button:
  - Sets the shutter speed
  - Sets the aperture in AV mode
  - To activate aperture change in the manual mode you must depress the Aperture Compensation Control button [13] in back of camera and then rotate the main dial [Speed Aperture Command Control dial--Reel #4]. Check with Canon Instruction manual for details.

### Interchangeable Port Mount: ⑤

- Allows the use of different ports to match different interchangeable lenses for creative imaging control. Carefully check that both O-rings mounted on the port thread areas are properly seated, cleaned and lubricated prior to installing the lens port.

### Zoom Lens Control: ⑥

- Operates the zoom control function: see the section called Attaching the Zoom Control Guide Ring in the chapter "Preparation of Housing" for details on attaching the Zoom Control Guide Ring.

### Display (On/Off) / Info: ⑦

The LCD monitor can display the camera setting screen, menus screen and image, etc.

- When shooting, press the button to turn the LCD display screen on/off.
- In Playback mode, press the display button to switch the display format: Single image display with/without basic info and shooting information display.

### Menu control: ⑧

- Menu: by setting various optional settings with the menus, you can set the image recording quality, the date/time, LCD monitor brightness. While viewing the LCD monitor and pressing this [Menu] button you can make selections with the Multi Button Selector [17] in conjunction with the Set Control [18] button on the back side of the housing.

### Jump: ⑨

- When the CF card contains many images, one can browse through them by 10 or 100 images at one time. Additionally, when images are shot on different days it is possible to browse through them by date.
  - Press the Jump button.
    - Select the Jump function with arrows [up/down]: 10 images, 100 images or jump by date.
    - Pressing the arrow keys [left/right] will allow the images to "Jump".
    - Press Jump again to curtail Jump mode.

### Playback Control: ⑩

- When this button is pressed, the last captured image will be displayed.
  - To view images captured last, press the left arrow button of the Multi Selector button; pressing the right arrow button will offer image viewing of the oldest [first shot] shots you took.
  - When the Display [7] is pressed, you can select the display format you choose.
- Pressing the Playback Control again will return to the camera setting display.

### Erase: ⑪

- You can select and erase images one at a time or all in one batch. Protected images will not be erased.
  - To erase one by one, you press the left or right Multi Selector button to select the image you want erased; then press button 11.
    - Select "Erase" to erase only the showing image, or "All" to erase all images, and then press the Set Control button [18]. The showing image or all the images will be erased.

### Viewfinder Eyepiece (12)

- View the image you want captured through this opening.
- In order to prevent the LCD screen from being turned off automatically by the eye sensor beneath the camera's eyepiece, which senses the back door of the housing and prevents the LCD from displaying information, it is important to disable this function through the Menu → Shooting Options → LCD auto off → Disable.

### Aperture/Exposure Compensation Control: Dual Control: (13)

- In the manual mode- you can set both the shutter speed and aperture. Set the Mode Control [2] to M [manual].
  - To set the shutter speed, turn the Command dial [4].
  - To set the aperture, hold down the Aperture button [13] and turn the Command dial.
- In any other mode than manual- hold down the Exposure Compensation Control button [13] and turn the main dial to make the photograph darker/brighter.

### **This is for two different functions: Aperture in manual mode, and exposure compensation control in any other mode.**

### Drive Mode Selection: (14)

- This button is for choosing single shooting, self timer or continuous shooting.
  - Press the Drive Mode button.
  - Use the arrows (left/right) to choose the drive mode.

### AE-Lock/FE Lock Control/Enlarge control: (15)

- Use the AE lock when you want to take multiple shots at the same exposure setting or when the area of focus is to be different from the exposure metering area. When the button is pressed, you lock the exposure—then you can recompose and take the shot.
- The FE lock locks the flash exposure setting over the desired area of the subject.
  - Press and Hold the AE-L/AF-L button to lock exposure and focus prior to recomposing a scene. The original exposure value and focus distance will remain set after re-composition.
- During image playback, press the enlarge control to magnify the image.

### AF Point Selection:

16

- In the Image Zone modes, all AF points are active. Usually the AF point covering the closest subject will be selected to focus the subject you want.
- In the creative zone, you can select one AF point to focus on. Press the AF Point Selection button, and press one of the 4 Multi Selector buttons to select an AF point.
  - While looking through the viewfinder, you can also select the AF point by turning the Command Dial button [4] until the desired AF point flashes in red. Press the Set Control button [18] to toggle the AF point selection between the center AF point and the automatic AF point selected.

### Four-Way Multi-Control:

17

- This four way button offers you the following functionality in the shooting mode. To alter one of the following, press the appropriate arrow, and use the four-way multi control to choose the value. Press the shutter button half way when done.
  - Metering Mode—left arrow
    - The metering mode is the method of measuring the brightness of the subject.
  - White Balance Selection—bottom arrow
    - White balance is for making the white areas look white instead of having a color cast.
  - ISO Speed Set—top arrow
    - Set the ISO speed to suit the ambient light level.
  - Auto Focus—right arrow
    - You change the AF mode to suit different subjects:  
One-Shot AF for stills and portrait.
      - AI Focus AF for unpredictable movement [wildlife].
      - AI Servo AF for sports photography.

### Set Control

18

- Set Control: the center button set in the middle of the Multi Selector Control buttons. Used to set and confirm changes to the Multi Control Selector settings and the Menu button.
- When the Set button is pushed, you can select a "Picture Style" by pushing the top or bottom Multi Selector buttons.

## Tray and Handle System Assembly

The Fantasea F400D Camera Housing comes with an easy to assemble Tray & Handle system. Please follow these instructions in order to assemble your system correctly.

### The Assembled System



### Step 1 – Attaching the Tray to the Camera Housing

1. Hold the Housing (Item #1) so its bottom side is facing up.
2. Position the Tray (Item #2) on top of the housing, so the three screw holes on the Tray are parallel to the three screw holes on the Housing's black attachment plate. Please note that the tray should be positioned in a way that the socket on the tray is facing down, towards the housing and handles. The conical side of the Tray screw holes should be facing up.
3. Use a Philips screwdriver in order to screw the three screws you have received with the Housing into the three screw holes on the Tray. It's important to tighten the screws only after all three screws are in place.

## **Step 2 – Attaching the Handles to the Tray**

1. Place a Handle (Item #3) on top of the end of the Tray. The Handle and Tray feature sockets that should connect to each other.
2. Position the handle in a comfortable distance from the Housing. Please note that positioning the Handle too close to the Camera Housing will interfere with opening and closing the Housing's buckles. On the other hand, positioning the Handle too far from the Camera Housing might make it difficult to reach the Housing's control buttons while still holding the Handles.
3. Insert the Handle screw (Item #4) from the bottom of the Tray, through the track, into the Handle, and tighten the screw.
4. Do the same for the other Handle on the other side of the Tray.

You can also find these instructions in our Customer Support Section on the website-  
<http://www.fantasea.com/technical.asp>

## Preparation of Housing Before the Dive

### Make Common or Required Camera Settings:

Prior to inserting camera in housing, it is recommended that *Menu Option* settings be made according to the preferences of the user. Most of these choices are ones that will remain unchanged for most of the time while diving, and therefore it will be more convenient and less time consuming to make the settings prior to diving.

### Mount Housing Port:

#### Clean & Lubricate (periodically) Port O-rings

1. In order to properly maintain the port you must periodically remove port O-ring from channel using only your fingers.
2. Push and lift the O-ring from its channel.
3. Do NOT use any sharp instruments, such as knives or dental picks, to remove O-ring. You may accidentally cut the O-ring causing a potential leakage.
4. Inspect the O-ring visually and by feel for any cuts, nicks, flat spots, stretching, or any debris, such as sand, dirt, lint, hair, or other matter that could compromise the integrity of the seal.
5. Clean O-ring by soaking in fresh water until all debris is removed.
6. Dry O-ring with a soft clean cloth. Be careful it does not leave any lint on the O-ring.
7. Lubricate the O-ring with the supplied silicone grease. Do not over-grease the O-ring. It only requires enough grease to allow it to slip into place and make a seal. It should be slippery and shiny but without any abundance or build-up of grease. A teardrop amount is usually sufficient for proper lubrication.
8. Inspect the O-ring channel for any debris or foreign matter that could damage the O-ring or cause it to lose its seal.
9. Clean the O-ring channel using a damp cloth or Q-tip. Be careful not to leave any lint behind.
10. Replace the O-ring in the channel by lifting it over the end of the port until it sits in its channel. Be sure the O-ring is not twisted or deformed and out of position in any way.
11. Mount the port on the housing body by aligning the threads on the end of the port with the mount on the housing and screwing clockwise until it is FULLY screwed in place.



<p>🌀 Note 1:</p>	<p>The F400D lens port uses 2 O-rings (one Radial O-ring and one Compression seal O-ring) for a watertight seal. Radial O-rings are affected by friction when closing the seal as it rubs against a housing wall. Compression O-rings are not affected by friction as there is no movement or rubbing against any wall. It is a direct face-to-face seal. Therefore a radial O-ring, such as the O-ring on the port, requires lubrication.</p>
<p>🌀 Note 2</p>	<p>Lubrication of an O-ring does not improve the seal. It only reduces the amount of friction on the O-ring when it is being moved into sealing position. The amount of lubrication required on the port O-ring is only enough to allow it to slip into place without friction, so it does not twist or become dislodged. More grease is not better, and could in some cases have a negative affect if it is applied in large amounts to form a build-up that could trap any debris or foreign matter.</p>
<p>🌀 Note 3</p>	<p>The Latching Buckles: Provides water tight closure to the housing. The 3 Stainless Steel buckles have a safety latch lock which should be manually pressed into the lock position and then carefully checked to ensure that the buckle cannot open by mistake during the dive. This can be checked by physically trying to open the latch without depressing the lock release. If the latch does open then you must try again to lock it down so it cannot open</p>

Open Housing:

- Release all three latches at same time, and lift off back half to open housing.
- Opening the levers- To overcome the friction of opening, two levers are used to push against the lid with a cam action. See picture attached.

<p><b>Important!</b></p>	<p><b>Be sure they are inserted all the way flat to the housing before turning to avoid damaging the protrusions on the lid.</b></p>
--------------------------	--



#### Inspect and Clean Main O-Ring:

- Use a clean wet cloth. Use only water to clean the o-ring's sealing surface.
- Do not remove the o-ring unless there is evidence that there is a need to clean the underside surface, or the channel it sits in.
- If the O-ring does need to be removed for cleaning or replacement, use your two thumbs and at the top corner of the housing where the O-ring groove is, push up from both side until a corner of the O-ring raises above the groove and gently grasp this O-ring section and pull it off the housing.
- When replacing the O-ring, place it back into the groove starting at the same corner and gently put it in by pressing it into the groove all around the housing until it is all sitting in the groove and no part of it is sticking up or out of the groove. You can then apply a slight layer of silicone if you have not done this yet. Be sure it is completely seated in the channel for a proper seal.

#### Attaching the Zoom Control Guide Ring:

- Attach the Zoom Control Guide Ring to the lens. This is attached using the Velcro strip. Insure that the projected nub is directly on the bottom.
  - The Camera and tray are inserted in such a way that the nub of the Zoom Control Guide Ring is sandwiched between the two projections found on the lens port. All are pointed a downward direction. The Zoom Control is operated when camera is installed in housing is this manner.

#### Insert 400D Camera and Lens into Housing:

- Mount camera with lens on the removable tray, using the tripod screw to fasten.
  - Slide the tray and camera into the housing tray slot. Make sure it is completely inserted. You will have to raise the On/Off /Mode Control while inserting tray with camera.
- Slide the flash sync cord into the F400 D's hot shoe; gently push to the end.
- Align the housing controls with the corresponding buttons on the camera. Take caution to insure the flat sync cord does not get caught in the housing seal by storing the slack alongside the left side of the camera.
  - Place back cover on the housing and align the both surfaces of the housing and the o-ring, forming a proper seal.
- Position all three latches over latch hooks in ready position.
  - Close all three latches at one time. If it is not possible to close all three latches at the same time, close the bottom latch first, maintaining pressure on the other side. Then close the two top latches simultaneously.
- Inspect the o-ring seal for proper closure. The o-ring can easily be seen through the transparent housing.

#### **Take a Test Dive:**

- **Make the first dive without the camera in housing.** This will give you a chance to inspect the housing seal for proper closure. In this case, any mistakes will not result in the loss of the camera.
- Operate all controls under pressure in the water and inspect for watertight seal.
- Before all dives, immerse the housing in the camera rinse tank, and press all buttons, to visually inspect for any leakage.
- While descending on every dive carefully observe the housing. If you see any bubbles rising from it or water entering surface immediately while holding the lens port in a downward position. Once on dry land carefully open the housing, take out the camera and dry it off if any water is on it and check to see if there is any damage. Please inspect the housing, rinse it in fresh water, dry it out and then take a dive without the camera in the housing to check for leaks or other malfunctions.

#### Recommended Initial Camera Settings:

- Set 400 D on M (Manual) Exposure Mode
  - This is to keep the built-in flash from trying to pop up in low ambient light.
  - The Auto Exposure Modes are not always appropriate for underwater photography.
- Set camera and lens to AF focus mode
- Use menu option to set camera for Focus Priority Release mode.
- Set Camera to Single Advance Mode
- Choose Evaluative light metering. This is the camera's standard metering mode suited for most subjects even under backlit conditions. After detecting the main subject's position, brightness, background, front and back lighting, etc., the camera sets the proper exposure.
- Set ISO to desired sensitivity setting. Use ISO 200 for the least amount of noise (digital grain), when possible.
- Set personal preferences by using camera menus.

#### Using External Strobes:

Compatible Strobes include any that can use the standard six pin sync. These strobes will have to be used in the Manual Flash Exposure mode.

If you have a 5 pin sync cord you can obtain a 5 pin to 6 pin converter cord from our website ([www.fantasea.com](http://www.fantasea.com)).

- Connect the strobe sync cord to housing's bulkhead sync port. On the side of the housing port notice a simple alignment indicator [dot] The 6 pin cord contains a small white dot. You must insert the cord into the port so the white dot is aligned with the indicator of the housing. This assures proper alignment. Hold firmly in place while fastening locking screw. Tighten the collar to secure the cord in place.

- The O-ring on the end of the sync cord should be inspected, cleaned and lubricated in the same way the port O-ring was treated.
- Using different B and J arm systems can be accommodated by attaching to the 1" (25mm) Aluminum ball on the top of the FD-400's handles. Fantasea offers a full range of Aluminum B and J arm sets and fittings.

## Care & Maintenance

- Before a dive:
  - Protect the Fantasea F400D from sun and heat. This will reduce the possibility of fogging due to condensation of the warm, moist air inside the housing when immersed in the colder water. It also reduces the possibility of sun damage to the polycarbonate. An insulated camera bag is a good means of protection from overheating.
  - Protect the Fantasea F400D from accidental impact damage. Secure the housing and camera in a safe location on the boat or in any vehicle, so it does not bounce around or bump into other cameras and housings. The insulated bag mentioned above should be padded for this reason. Do not leave the camera and housing in a camera rinse tank or bucket on the boat in route to the dive site. Rough conditions can cause impact damage and photo gear can often get tangled if too many systems are together in the tank.
  - Inspection of all user serviceable O-rings should be a routine pre-dive check. Required maintenance for the main O-ring involves cleaning only (if there is no damage requiring replacement). Some O-rings may require lubrication. Use the silicone grease supplied with the housing. Use only enough grease to lightly cover the O-ring to reduce friction as it is put into its place and the seal is made. Over-lubrication should be avoided and can result in debris accumulating on the O-ring, and compromise the seal.
  - It is highly recommended that the housing be immersed in the rinse tank or in shallow water before every dive and all its controls operated to visually confirm that it is watertight before descending to depth.
- After a dive:

- Rinse the housing with a strong stream of fresh water. Let it soak for about 20 minutes to allow the water to dissolve any salt residues under the controls or in tight spaces.
- Operate all the controls while the housing is soaking to help dislodge any salt residue that may be caught under or around the controls.
- Dip the housing vigorously several times to agitate the final remains of salt from the narrow areas or around the controls.
- Detach sync cords, arms & brackets for overnight storage. This will greatly reduce the possibility of electrolysis and corrosion that can build up between similar metals on the housing.
- Dry with a clean towel or allow drying naturally in a cool shady place.
- Traveling:
  - Use protective hard case when traveling to protect the camera and housing from impact damage.
  - If possible, do not check camera and housing case on airlines. Use a hard case that can fit under the seat or in the overhead compartment of aircraft, and hand carry.
- Annual Maintenance and Storage:
  - The housing's main compression and port O-ring should be replaced every year or more often if used frequently. The frequency of replacement depends on the user's inspection of these seals and their condition at the time. If in doubt, it is always better to change them in order to not take the chance of flooding the housing.
  - The seals on each of the controls should be replaced every couple of years or more often if needed. The best indicator of the need for replacement is if the controls become harder to operate due to a build up of salt or corrosion.
  - Store housing in a cool, dry location when not traveling. It is recommended that the housing be stored with the two halves together, but not with the latching buckles closed. This will take the constant pressure off the main radial o-ring. It is also recommended that the housing is not stored with the port mounted.

## Basic Shooting Techniques

- Practice handling the 400D on land
  - Getting familiar with the location and movement of all the controls and how the changes in settings can affect your image is an important part of the process. It is better to learn the basics of the camera's operation on land, rather than when first underwater. It is faster to operate the camera out of the housing and you will not have the limited time frame as you would if you were underwater.
- Focusing and Shutter release control
  - Get used to operating this control on the camera in both half depress, and full depress movements. You will frequently depress the shutter release only half way to activate the exposure meter and auto focus to preview the shooting conditions and make setting changes. Once you get the feel for operating the camera control directly, you can then try it in the housing, using the housing's controls in the same manner.
- Use the viewfinder eyepiece
  - Compose and view exposure information display. It is very important that you become familiar with the information display in the viewfinder so you can make proper exposure settings and know what other settings have been made. You will use this often and it is good to become familiar with it before attempting to read it underwater. Also practice composing and focusing the camera by eye, before using it underwater to get the feel for this operation as well.
- Changing Exposure Settings
  - Using the camera in its Manual (M) Exposure Mode gives you the ability to change either shutter speeds or apertures to control the exposure the way you want. Get used to making these changes while your eye is in the viewfinder. To activate aperture change in the manual mode, you must depress the Command Control button and then rotate the reel dial. Practice operating each of these controls so they become instinctive in operation.
- Familiarize yourself with the movements required
  - Utilizing each housing control to properly and efficiently change camera settings. Some controls only require a straight pushing movement, while others may require rotating and pushing simultaneously to operate.

- Using the camera's light meter to determine ambient light
  - Read the Canon 400D instruction manual for complete description of its light meter and its use. It will help guide you to the proper shutter speed and aperture combination for proper ambient light exposure. Where you aim the meter is also important. In underwater photography, it is important to remember to aim the meter at the background water or "sky" to get the proper exposure information. It is often necessary to gather this information, make your exposure settings, and then re-compose the scene before shooting.
- Sometimes it is good to operate the AE-L button
  - When locking in the exposure value of the background before re-composing and taking the photo.
- The ISO Sensitivity setting on the camera
  - This is the same as the film speed that photographers set on film cameras, with one small difference: There is no film. This setting is the equivalent of the film speed you would normally set. The higher the ISO sensitivity number, the more light is captured and the brighter the image. Higher ISO sensitivity numbers have more "*Noise*", a term that is the digital equivalent of *grain* in higher speed films. Try starting out with a lower ISO sensitivity such as ISO 200 if the lighting conditions permit.
- Get close to you subject when shooting underwater
  - This will improve the effectiveness of your strobe in restoring lost color. It will also expand the sharpness of the image by reducing the amount of backscatter between the lens and the subject.
- Begin by choosing subjects
  - Choose those that are easy to approach and will not scare off readily when you approach. Choose subjects that will result in a large image size. This will make a more dramatic image.
- Change F/Stops and shutter speeds to "*bracket*" your exposures
  - This will give you a range of image exposures, from which you can choose the one that you like the best. It improves the probability of getting a good shot.

- Use flash all the time
  - This will restore the vivid colors lost through selective light absorption. Get to know the full manual power rating of your strobe, by shooting at a constant distance from an average reflective subject, and take several shots at different F/stops.
- Focus lock on your subject
  - Practice depressing the shutter release half way, and hold the focus until you are ready to record the image. If you are shooting a moving subject, it may be helpful to focus lock on a nearby part of the coral reef and wait for the subject to enter into your plane of focus.
- Take lots of shots of any subject or scene
  - It is important to vary each shot by changing exposure settings or composition. This will give you a good sample of shots from which to select the best one.
- Shoot at an upwards angle or against the blue water
  - When photographing under water, shoot your subject matter at a slightly upward angle to use the backlit bluish water as a backdrop. This technique also can produce interesting silhouettes. If you photograph a dark subject while aiming downward, you could lose your subject against the dark depths below or rock or coral reefs.

## Camera Lenses and Ports

The Fantasea 400D has an interchangeable port system that will accommodate a wide variety of SLR lenses for use underwater. These ports include:

- Standard Flat Port:  
This port will accommodate the 18-55 mm zoom lens, which is a very popular lens and the most common one. This port makes use of the manual zoom control.
- 100mm Macro Port:  
This is the best tool for capturing the tiny and shy marine subjects. When it is not possible to closely approach your subject, the lens will still offer life-size image reproduction, but with a longer working distance.
- 5" Dome Port:  
For distortion free use with wide-angle lenses, having a focal length of 20mm or more. Some Zoom lenses can be used with this port, but may require a diopter to allow it to focus accurately. Check with the dealer as to which lenses will accommodate this port.



Please Visit our website [www.fantasea.com](http://www.fantasea.com) for more lenses, ports and other accessories compatible with this housing.

## **Fantasea F400D Warranty**

The 400 -D includes a two-year limited warranty for defective parts which the manufacturer will replace.